

REMARKS

Claims 1-14 are pending in the present application. Claim 13 stands rejected as indefinite. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being obvious over International Publication WO 01/46684 ("Lehman").

Claim 13 has been amended to correct an antecedent basis problem.

Claim 1 calls for transferring the substrate to a second polishing station when the eddy current monitoring system indicates that a predetermined thickness of the metal layer remains on the substrate, and then polishing the metal layer at the second polishing station at a second polishing rate that is lower than the first polishing rate.

Claims 8 and 14 call for reducing the polishing rate when the eddy current monitoring system indicates that a predetermined thickness of the metal layer remains on the substrate.

The Examiner correctly notes that Lehman discloses monitoring a substrate with both an eddy current monitoring system and an optical monitoring system.

However, Lehman does not disclose reducing the polishing rate when the eddy current monitoring system indicates that a predetermined thickness of the metal layer remains on the substrate. Lehman suggests that the eddy current sensor be used to detect the polishing endpoint where the underlying layer is exposed. Lehman also suggests measuring the layer thickness and adjusting the polishing pressure to compensate for polishing non-uniformities. But this is not the same thing as reducing the polishing rate at some predetermined thickness point during the polishing of the metal layer.

Since Lehman fails to disclose or suggest each of the elements of claims 1, 8 and 14, the Examiner has not made a *prima facie* case of obviousness.

Attached is a marked-up version of the changes being made by the current amendment.

Applicant : Fritz Redeker et al.
Serial No. : 09/918,591
Filed : July 27, 2001
Page : 5

Attorney's Docket No.: 05542001 / 4563-3/CMP

Applicant asks that all claims be allowed. Please apply any other charges or credits to
Deposit Account No. 06-1050.

Respectfully submitted,

Date: 6/13/02



David J. Goren
Reg. No. 34,609

Telephone: (650) 839-5070
Facsimile: (650) 839-5071

50092334.doc

A

Version with markings to show changes made

In the claims:

Claims 1, 8 and 14 have been amended as follows:

1. (Amended) A method of chemical mechanical polishing a metal layer on a substrate, comprising:
 - polishing the metal layer on the substrate at a first polishing station with a first polishing surface at a first polishing rate;
 - monitoring polishing at the first polishing station with an eddy current monitoring system;
 - transferring the substrate to a second polishing station when the eddy current monitoring system indicates that a predetermined thickness of the metal layer remains on the substrate;
 - polishing the metal layer on the substrate at the second polishing station with a second polishing surface at a second polishing rate that is lower than the first polishing rate;
 - monitoring polishing of the metal layer at the second polishing station with an optical monitoring system; and
 - halting polishing when the optical monitoring system indicates that a first underlying layer is at least partially exposed.

8. (Amended) A method of chemical mechanical polishing a metal layer on a substrate, comprising:
 - polishing the metal layer on the substrate at a first polishing station with a first polishing surface at a first polishing rate;
 - monitoring polishing at the first polishing station with an eddy current monitoring system;
 - reducing the polishing rate at the first polishing station when the eddy current monitoring system indicates that a predetermined thickness of the metal layer remains on the substrate;
 - monitoring polishing of the metal layer at the first polishing station with an optical monitoring system; and

halting polishing when the optical monitoring system indicates that a first underlying layer is at least partially exposed.

13. (Amended) The method of claim [8] 11, wherein polishing at the second polishing station continues until the first underlying layer is substantially entirely exposed.

14. (Amended) A method of chemical mechanical polishing a metal layer on a substrate, comprising:

polishing the metal layer on the substrate at a first polishing rate;
monitoring polishing with an eddy current monitoring system;
reducing the polishing rate when the eddy current monitoring system indicates that a predetermined thickness of the metal layer remains on the substrate;
monitoring polishing of the metal layer with an optical monitoring system; and
halting polishing when the optical monitoring system indicates that an underlying layer is at least partially exposed.